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ABSTRACT

This directory describes the rationale of the Cooperative College-School Science Program (CCSS) of The National Science Foundation. The program aims to produce changes in school systems by projects planned jointly by schools and colleges. The projects normally provide for training of school system personnel by the cooperating college. During the 1969 financial year, grants totalling $5,596,241 were awarded. Brief descriptions of the 146 CCSS projects are given. Approximately 7000 teachers in 43 states are involved. A third of the projects focus on elementary schools and two-thirds on secondary schools. The content areas include mathematics, computer science, physical, biological and earth science, and the social sciences. Many of the projects have as their purpose the introduction into school classrooms of one of the new science or mathematics instructional programs. (EB)

ED034684

Cooperative College-School Science Program

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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Projects to Improve Science and Mathematics in the Schools

1969 Directory

SE 007 677

NATIONAL SCIENCE FOUNDATION
Washington, D.C. 20550

E 69-P-23

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Suggestions for Preparation of Proposals to this Program will be sent upon request. See page iii, paragraph 3, of this brochure.

THE COOPERATIVE COLLEGE-SCHOOL SCIENCE PROGRAM

Approaches for School System Improvement

The Cooperative College-School Science Program (CCSS) of the National Science Foundation provides opportunities for colleges, universities, and similar institutions to work with school systems in improving elementary and secondary school science and mathematics programs. Projects supported through CCSS are addressed to practical problems of the school science program which are of sufficient substance and complexity to warrant a cooperative approach by the schools and a nearby college.

Many of the projects in CCSS have as their purpose the introduction into school classrooms of one of the science or mathematics instructional programs which have been developed in the last dozen years by teams of scientists and educators. These programs have opened new and dramatic possibilities for science and mathematics teaching and many schools now wish to make use of them.

A decision on the part of a school system to adopt a new science or mathematics program implies many commitments. New books, equipment and supplies, even new laboratory facilities, may have to be provided. Adaptation of materials to local needs may be desirable. Most importantly, instruction must be provided for the teachers who will introduce the materials. A grant from the CCSS Program may enable a college or university to provide much of the expert assistance in implementation which is required. As an approach, the system may arrange for a group of its teachers to participate in a summer instructional program jointly planned by the college and the school system. This could be followed during the next academic year by further in-service teacher training, school classroom visits by college personnel, informational meetings for school administrators, etc. Grants are not primarily for the purpose of planning, but rather for introducing desired developments. Major planning activities between the schools and the cooperating college have already occurred in advance of a proposal being submitted to the Program.

Not all of the projects supported through the CCSS Program are to introduce school system changes as comprehensive as a new science curriculum. In some cases, existing courses may need to be modernized and enriched as part of a revitalization of the science program. Again, a college may assist by working with the school system to provide relevant instruction and intellectual support for school system personnel.

The impetus for a project may come from the schools, sensitive to their own requirements and anxious to begin some reform. In other cases, the college may take the lead in introducing school system administrators and teachers to the possibility of implementing an improved science or mathematics offering through a CCSS grant.

Whatever its genesis, a project will almost certainly involve training provided by the college for school system personnel. For really small school systems, this may include instructing most of the system teachers through summer and academic year programs. In the case of larger systems, this approach is infeasible because of scale, and a strong pattern is for the college to train a group of teachers in such a way that they become resource teachers and instructors of other teachers in the system. A project may involve a continuing relationship between college and schools extending over a period of a few years until desired changes have been brought about, but support through CCSS should have a planned phasing out within a reasonable time.

Grants are made in the CCSS Program only to colleges, universities, and similar institutions although schools are involved in the planning. Because these projects are designed to assist specific schools, teacher-participants are selected from those schools. Teachers seeking information should therefore communicate with the individual project directors, not with the National Science Foundation. The programs receive adequate publicity within the school systems to which they apply.

Teachers who receive training in these projects during several weeks in the summer usually receive stipends and dependency allowances through the Foundation grant. For academic year activities, the grant may also provide funds to assist with transportation and meal costs. As partners in the enterprise, the schools are encouraged to participate in the financial support of a project, but monetary participation is not mandatory. The grantee institution is responsible for proposing cost-sharing arrangements for participant support when that is appropriate.

Some CCSS projects have a State-wide or regional orientation. A project may, for example, seek to improve instruction in one of the sciences in a number of school systems distributed throughout a region. For these projects, the Foundation sometimes supports a consortium of colleges to present a uniform kind of training to teachers and, at the same time, promote close association of the school systems with nearby and easily accessible college resources. One of the colleges, working in alliance with the State department of public instruction, may play a central role in coordinating project activities.

A number of CCSS projects assist the schools to provide better instructional programs for specific groups of students. Some attempt to promote the development in science of students who are already well motivated and capable; others are designed to increase the relevance and meaning of science and mathematics for students who are socially or educationally disadvantaged. The mechanism of the CCSS Program which uses, in tandem, capabilities of the schools and the resources of the colleges can contribute fresh approaches for educating the disadvantaged; however, funds are limited, and only model or pilot projects can be supported. In particular, support for the training of large groups of students is not within the purview of CCSS. Successful projects should aim at school system changes which will operate to achieve the desired goals.

In its FY 1969 support for CCSS projects, the Foundation awarded 146 grants totaling $5,596,241 to higher educational institutions. Through these grants, training opportunities for approximately 7,191 teachers will be made available. A third of the projects focus on elementary schools and two-thirds on junior or senior high schools. A few of the projects provide for the use of special student-demonstration classes. Brief descriptions of the 146 Cooperative College-School Science projects are appended.

The Foundation will have available in April 1969 a brochure "Cooperative College-School Science Program for School System Improvement - Suggestions for Preparation of Proposals" (E 69-P-22). This publication, which will be sent upon request, provides information about the Program and the preparation of proposals for the August 11, 1969, proposal closing date.

Inquiries concerning the CCSS Program
should be addressed to:

Cooperative College-School Science Program
SCIS/PES
National Science Foundation
Washington, D. C. 20550

COOPERATIVE COLLEGE-SCHOOL SCIENCE PROJECTS
1969-70

ALABAMA

FLORENCE STATE UNIVERSITY, Florence 35630; Elementary School Science (Elementary Science Study materials); summer: 3 weeks, August 4-22, 1969; academic year: 12 meetings during 1969-70; 34 teachers and principals from Tuscumbia School System. This project is directed toward incorporating Elementary Science Study (ESS) materials into the curriculum of the Tuscumbia City School System. Professor Hollis C. Fenn, Department of Science.

SPRING HILL COLLEGE, Mobile 36608; Mathematics; summer: 6 weeks, June 9 - July 18, 1969; academic year 1969-70: 30 meetings; 25 teachers from eight school systems in Alabama and Mississippi. Subject matter background and teaching skills will be strengthened for teachers of school systems in which mathematics curriculum improvements are being undertaken. Dr. Walter L. Furman, Department of Mathematics.

TROY STATE UNIVERSITY, Troy 36081; Biology (Biological Science Curriculum Study - Green Version); summer: 8 weeks, June 16 - August 8, 1969; academic year: 5 meetings, September 1969 - May 1970; 25 teachers from southeast Alabama. Participants will study the Green Version of BSCS as an aid for improving the instructional program in biology in their individual schools. Dr. James C. Wilkes, Department of Science.

ARIZONA

ARIZONA STATE UNIVERSITY, Tempe 85281; Mathematics; summer: 6 weeks, June 23 - August 1, 1969; academic year 1969-70: 8 meetings, 47 elementary school teachers, 3 education specialists from Bureau of Indian Affairs Schools. Participating teachers will receive training in elementary school mathematics and will serve as discussion leaders in their respective schools at weekly meetings of teachers which will be held throughout the academic year. Dr. Lehi T. Smith, Department of Mathematics.

ARKANSAS

SOUTHERN STATE COLLEGE, Magnolia 71753; Elementary School Science (Science Curriculum Improvement Study materials); summer: 4 weeks, July 8 - August 1, 1969, with coordinated program during academic year 1969-70; 30 teachers, grades 4-6, from Magnolia Public Schools. Teachers will study the SCIS approach to the teaching of science and will prepare plans for teaching this material in their own classes during the academic year. Professor B. C. Dodson, Department of Science.

UNIVERSITY OF ARKANSAS, Fayetteville 72701; Biological Science (Biological Science Curriculum Study materials); summer: 9 weeks, June 2 - August 1, 1969; academic year 1969-70: 4 meetings; 25 secondary school teachers from schools of northwest Arkansas. Teachers will receive training in BSCS materials, concentrating on the Green Version, to improve their academic competency and teaching effectiveness. Dr. Sallylee Hines, Department of Science Education.

CALIFORNIA

CALIFORNIA STATE COLLEGE, Fullerton 92631; Elementary School Science (AAAS Science--A Process Approach); summer 1969: 4 one-half day pre-school sessions; academic year 1969-70: 27 one-half day in-service sessions to be held during school hours; 9 teachers from the Fullerton Elementary School District. The teachers will receive training in the AAAS materials which they will be using during the academic year. Dr. Robert E. Lepper, Department of Science and Mathematics Education.

CALIFORNIA STATE COLLEGE, Hayward 94542; Physical Science (Introductory Physical Science materials); summer: 4 weeks, June 23 - July 18, 1969; academic year 1969-70: 36 two-hour meetings; 40 participants from junior and senior high schools primarily in the Hayward Unified School District. Teachers will receive academic content and techniques training in the Introductory Physical Science materials prior to teaching this program in the following academic year. Dr. Robert C. Whitney, Department of Earth and Physical Science.

CHICO STATE COLLEGE, Chico 95926, Secondary School Mathematics; summer: 8 weeks, June 16 - August 8, 1969; academic year 1969-70: classroom visits by project staff; 20 junior high school teachers and 30 senior high school teachers from northern California. The participants are teachers of mathematics from small schools who will improve their knowledge of mathematical concepts and their ability to present these by receiving training in algebra with follow-up training during the academic year. Dr. Lloyd M. Cook, Department of Mathematics.

COLLEGE OF NOTRE DAME, Belmont 94002; Sociology;summer: 4 weeks, July 28 - August 22, 1969; academic year: 15 meetings, March 1969 - June 1970; 30 teachers from Cabrillo district and San Mateo County, especially teachers of the disadvantaged. The purpose is to upgrade the qualifications of teachers in the subject area of sociology and to implement the new curriculum materials prepared by the Sociological Resources for Secondary School project. Dr. June R. Chapin, Department of Education.

FRESNO STATE COLLEGE, Fresno 93726; Earth Science (Earth Science Curriculum Project materials); summer: 6 weeks, June 16 - July 25, 1969; academic year: 15 meetings, September 1969 - June 1970; 25 teachers from the Fresno City Unified, Fresno County Secondary, Woodlake Union, High, Turlock Union High, Ceres Unified and Muroc Unified School Districts. Teachers will study ESCP materials as a prelude to establishing earth science courses in their schools. Dr. Stan M. White, Department of Geology.

SAN DIEGO STATE COLLEGE, San Diego 92115; Mathematics; summer: 8 weeks, June 23 - August 14, 1969; academic year: September - December 1969; 16 meetings; 50 teachers from public school systems of San Diego County. This project will provide the teachers with subject matter to increase their competence and confidence in treating technological and scientific applications of mathematics. Professor J. W. Goodfellow, Department of Mathematics.

SAN DIEGO STATE COLLEGE, San Diego 92115; Economics; summer: 6 weeks, June 23 - August 1, 1969; consultative meetings during academic year 1969-70; 40 high school teachers from school districts in San Diego County and from the San Diego Unified School District. The objective of the project is the improvement of the teaching of twelfth grade economics in San Diego County. Dr. Joseph McClintic, Department of Economics.

STANFORD UNIVERSITY, Stanford 94305; General Science; summer: 8 weeks, June 16 - August 8, 1969; academic year: weekly seminars; 12 high school teachers from Palo Alto Schools. Teachers will be trained in research methodology by participating in scientific research programs. Dr. Angelos Dellaporta, School of Medicine.

UNIVERSITY OF CALIFORNIA, Berkeley 94720; Junior High School Science; summer: 2 weeks, September 1-12, 1969, 15 substitute science teachers; academic year 1969-70: 200 junior high school science teachers in groups of 25, each group to spend 2 weeks at Lawrence Hall of Science, plus follow-up sessions; twenty school districts in San Francisco Bay Region. The science teaching staff of each of several junior high schools will spend two weeks studying space or physical science at the Lawrence Hall of Science during the academic year. Professor August C. Helmholz, Physics Department.

UNIVERSITY OF CALIFORNIA, Berkeley 94720; Elementary School Science (Science Curriculum Improvement Study materials); summer: 4 weeks, June 23 - July 20, 1969; academic year 1969-70: 18 meetings, 50 elementary school teachers and 2 administrators from San Francisco Unified School District. The main purpose of this project is to initiate and implement the SCIS science curriculum in the elementary grades of the San Francisco Public Schools. Professor Robert Karplus, Physics Department.

UNIVERSITY OF CALIFORNIA, Berkeley 94720; Elementary School Science (Science Curriculum Improvement Study materials); summer: 4 weeks, June 16 - July 11, 1969; academic year 1969-70: 18 meetings; 50 elementary school teachers from Berkeley Unified School District. Participants will be prepared to implement the SCIS materials into the primary grades of Berkeley schools. Dr. Alan Portis, Lawrence Hall of Science.

UNIVERSITY OF CALIFORNIA, Irvine 92664; Mathematics; academic year 1968-69: regular instructional meetings; 900 teachers from the Orange County School Districts. This project will complete the orientation and subject matter training of teachers in a mathematics curriculum developed by the Orange County School System. Dr. Bernard R. Gelbaum, Associate Dean, School of Physical Sciences.

UNIVERSITY OF CALIFORNIA, Los Angeles 90023; Elementary School Science (Science Curriculum Improvement Study materials); summer: 2½ weeks, June 16 - July 2, 1969; academic year 1969-70: 50 meetings; 100 teachers from Los Angeles. This project provides for key Los Angeles City school teachers, subject matter specialists, and supervisors to study the philosophy, methods, and materials of the Science Curriculum Improvement Study (SCIS). Dr. Cornelius J. Troost, Graduate School of Education.

UNIVERSITY OF SANTA CLARA, Santa Clara 95053; Mathematics; summer: 2 weeks, June 16-20, 1969 and September 1-5, 1969; 6 teachers from Fremont Union High School District; academic year: September 1969 - June 1970, 45 meetings, same teachers, 300 students. The mathematics curriculum in participating schools will be improved through the development and use of unique problem solving exercises for the more capable students. Professor G. L. Alexanderson, Department of Mathematics.

UNIVERSITY OF SANTA CLARA, Santa Clara 95053; Physics (Harvard Project Physics materials); summer: 7 weeks, June 23 - August 8, 1969; academic year 1969-70: 4 meetings; 30 secondary school teachers from Santa Clara County schools. Teachers will receive training in the content and methods of Harvard Project Physics. Dr. John Drahmann, Department of Physics.

UNIVERSITY OF SOUTHERN CALIFORNIA, Los Angeles 90007; Mathematics; summer: 7 weeks, June 16 - August 1, 1969; academic year 1969-70: 18 meetings; 30 secondary teachers from Los Angeles City Schools. Participants will study topics in calculus in order to strengthen the Los Angeles Advanced Placement Calculus program. Dr. Paul A. White, Department of Mathematics.

UNITED STATES INTERNATIONAL UNIVERSITY (California Western Campus) San Diego 92106; Mathematics (Madison Project materials); summer: 2 weeks, August 18-29, 1969, 100 junior and senior high school teachers of low achieving mathematics students; coordinated academic year program, 1969-70: 300 similar teachers; all participants from the public schools of San Diego County. The program will provide teachers of low achieving students with methods to promote interest in mathematics and to provide for individualization of instruction through use of materials assembled by the Madison Project. Professor Donna D. Johnson, Mathematics Department.

UNIVERSITY OF ILLINOIS, Urbana 61801 (with Los Angeles City and San Bernardino County public schools); Mathematics (UICSM); summer: 6 weeks, June 23 - July 31, 1969, in California; academic year 1969-70: 4 meetings and classroom visits by project staff; 30 teachers from Los Angeles City and San Bernardino County public schools; Director: Professor Max Beberman, University of Illinois Committee on School Mathematics, 1210 West Springfield, Urbana, Illinois 61801. Los Angeles contact: Sidney Sharron, Mathematics Supervisor, Los Angeles City School District, P. O. Box 3307, Los Angeles, California 90054; San Bernardino contact: Miss Sylvia Pattison, Coordinator of Mathematics, Office of the County Superintendent, 172 West Third Street, San Bernardino, California 92403. (This project is also listed under ILLINOIS).

COLORADO

COLORADO STATE COLLEGE, Greeley 80631; Physics (Harvard Project Physics materials); summer: 8 weeks, June 16 - August 8, 1969; academic year 1969-70: 30 meetings to be held in Wheat Ridge High School in Jefferson County; 25 secondary school physics teachers from seven school districts in the Denver and Greeley areas. This project will train the participants in Harvard Project Physics and assist the implementation of that curriculum in the State of Colorado. Dr. Richard Fry, Department of Physics.

UNIVERSITY OF COLORADO, Boulder 80302; Elementary School Science; (AAAS, SCIS, and ESS materials); spring 1969: 6 meetings; summer: 2 weeks, August 18-29, 1969, 45 teachers; academic year 1969-70: 16 meetings, coordinated program involving 300 additional teachers; all teachers from six Colorado school districts. Selected teachers will receive training in one of the new elementary science programs and will assist in the instruction of other teachers during the latter phases of the project. Dr. Ronald Anderson, School of Education.

UNIVERSITY OF COLORADO, Boulder 80302; Biology;(Biological Sciences Curriculum Study materials); spring semester 1969: 15 Saturday meetings; summer: 2 weeks, August 18-29, 1969; 90 secondary school biology teachers from the State of Colorado. Participants will receive training and classroom experience in the use of BSCS materials. Dr. Glen E. Peterson, BSCS, P. O. Box 930, Boulder 80302.

UNIVERSITY OF COLORADO, Boulder 80302; Engineering (Engineering Concepts Curriculum Project materials); summer: 6 weeks, July 7 - August 15, 1969; academic year: 16 meetings in Spring 1969; and 11 meetings in Fall 1969; 30 teachers and 20 administrator-counselors from the State of Colorado. The participants will be familiarized with the ECCP content and philosophy and will receive in-depth training for implementation of these materials into pilot classes. Dean G. J. Maler, College of Engineering.

UNIVERSITY OF COLORADO, Denver 80202; Computer Science; summer: 5 weeks, June 23 - July 25, 1969; academic year 1969-70: weekly classroom visits; 28 teachers from nine Denver Metropolitan school districts. Selected teachers will be instructed in computer related mathematics and in the instructional use of computers in school classrooms. Professor P. E. Bartlett, College of Engineering.

UNIVERSITY OF DENVER, Denver 80210; Mathematics; spring 1969: 1 week, March 17-23; summer 1969: 2 weeks, June 9-15 and August 11-17; academic year 1969-70: 2 two-day sessions, September 6-7 and December 11-12; 25 secondary school teachers and 50 mathematics specialists and educators from the State of Colorado. The project extends an ongoing in-service teacher training and curriculum development program in elementary mathematics from a regional to a Statewide basis. Professor Ruth I. Hoffman, Department of Mathematics.

CONNECTICUT

WESTERN CONNECTICUT STATE COLLEGE, Danbury 06810; Earth Science (Earth Science Curriculum Project materials); summer: 6 weeks, June 23 - August 1, 1969; academic year 1969-70: 16 meetings; 30 junior high school teachers from schools in Fairfield County, Connecticut and nearby eastern New York State. An introduction to the ESCP materials and laboratory approaches will be provided participants along with field experience based upon local areas of geological interest. Dr. Donald W. Groff, Department of Earth Science.

DISTRICT OF COLUMBIA

THE AMERICAN UNIVERSITY, Washington 20016; Elementary School Science (AAAS Science--A Process Approach and Science Curriculum Improvement Study materials); summer: 4 weeks, June 17 - July 15, 1969; academic year 1969-70: 3 meetings; 30 elementary school teachers and 15 elementary school principals from the District of Columbia. Teachers will receive training in two new elementary science programs and will teach one of them during the following academic year. Dr. Leo Schubert, Department of Chemistry.

DISTRICT OF COLUMBIA TEACHER'S COLLEGE, Washington 20009; Multiple Science; summer: 10 weeks, June 17 - August 23, 1969; academic year 1969-70: 64 meetings, consultative services on curriculum improvement implementation to be provided by project staff, 20 persons to be trained as technical assistants in District Schools. Teachers will gain experience in using technical assistants who will be trained and be available in the schools to assist the science program. Professor William M. Logan, Department of Science.

GEORGE WASHINGTON UNIVERSITY, Washington 20006; Elementary School Science; summer: 6 weeks, June 23 - August 1, 1969; academic year 1969-70: consultative services and classroom visits by project staff; 40 elementary and junior high school teachers from St. Mary's County, Maryland. Teachers will be oriented to a new St. Mary County Science Curriculum and will teach it during the following academic year. Dr. Carol R. St. Cyr, School of Education.

HOWARD UNIVERSITY, Washington 20001; Physical Science (Introductory Physical Science materials); summer: 6 weeks, June 9 - July 18, 1969; academic year 1969-70: classroom visits by project staff; 30 junior high school teachers and 30 students (for demonstration classes) from schools of the District of Columbia. Teachers will receive training in Introductory Physical Science materials with opportunities to observe and teach IPS under the guidance of experienced persons. Dr. Halson V. Eagleson, Department of Physics.

FLORIDA

FLORIDA INSTITUTE OF TECHNOLOGY, Melbourne 32901; Extra-Classroom Research Activities; summer: 8 weeks, June 16 - August 8, 1969, 20 teachers; academic year 1969-70: 38 meetings, same 20 teachers and 350 students from Brevard, Indian River, and Orange County school systems. Science teachers will engage in research activities in the summer and will supervise student research projects during the academic year. Dr. David D. Woodbridge, Director of Research.

UNIVERSITY OF FLORIDA, Gainesville 32601; Multiple Sciences; summer: 8 weeks, June 15 - August 9, 1969; academic year 1969-70: 30 meetings, including 6 field trips; 45 junior high school teachers from Duval County. Teachers will receive instruction and develop skills for the training of students who are educationally disadvantaged. Dr. N. E. Bingham, Department of Science Education.

UNIVERSITY OF SOUTH FLORIDA, Tampa 33620; Engineering (Engineering Concepts Curriculum Project materials); summer: 6 weeks, June 16 - July 25, 1969; academic year 1969-70: 2 meetings and classroom visits by project staff; 24 high school teachers from Hillsborough and surrounding counties. Selected high school teachers will be prepared to teach the ECCP course, "The Man-Made World." Dean E. W. Kopp, College of Engineering.

GEORGIA

EMORY UNIVERSITY, Atlanta 30322; Physics (Harvard Project Physics materials); summer: 4 weeks, June 16 - July 11, 1969; academic year 1969-70: 18 meetings; 24 high school teachers of physics from the City of Atlanta and DeKalb County Schools. Teachers will study the Harvard Project Physics program and associated background material and will introduce the program in Atlanta and DeKalb high schools during the academic year. Dr. James W. Simmons, Physics Department.

OGLETHORPE COLLEGE, Atlanta 30319; General Science; summer: 6 weeks, July 7 - August 15, 1969; academic year 1969-70: 9 meetings; 45 junior high teachers and 5 administrators from six counties of Northeast Georgia Instructional Service Unit. Teachers will receive training in implementing Vol. III, Science for Georgia Schools. Professor George F. Wheeler, Science Division.

UNIVERSITY OF GEORGIA, Athens 30601; Mathematics (UICSM materials); summer: 7 weeks, June 9 - July 25, 1969; academic year 1969-70: 16 meetings; 15 junior high school teachers, 35 elementary school teachers and 25 students for demonstration classes from Houston County Schools. Junior high school teachers will study UICSM materials while elementary teachers will study various materials and devices designed to improve mathematics teaching in their schools. Dr. William D. McKillip, Department of Mathematics Education, College of Education.

UNIVERSITY OF GEORGIA, Athens 30601; Mathematics; academic year: 2 meetings weekly, September 1969 - May 1970; 30 teachers from Clarke County Public Schools. This program is designed to improve the teaching of mathematics in specified schools by using a college staff member as a mathematics consultant and academic leader. Dr. Robert Willcutt, Department of Mathematics.

HAWAII

UNIVERSITY OF ILLINOIS, Urbana 61801 (with State of Hawaii Public School); Mathematics (UICSM); summer: 6 weeks, June 30 - August 8, 1969, in Honolulu; academic year 1969-70: 32 meetings; 30 Hawaii Junior High school teachers. Participating teachers will receive special training in UICSM mathematics and will be assisted in introducing the materials into their classrooms. Director: Professor Max Beberman, University of Illinois Committee on School Mathematics, 1210 West Springfield, Urbana, Illinois 61801; Hawaii contact: Mrs. Naomi K. St. Denis, Department of Education, Honolulu, Hawaii 96804. (This project is also listed under ILLINOIS.)

IDAHO

NORTHWEST NAZARENE COLLEGE, Nampa 83651; Physics; summer: 6 weeks, June 16 - July 25, 1969; academic year 1969-70: 8 meetings, 30 high school teachers from school districts of the Boise Valley area. Participants will receive training in subject matter and laboratory methods in high school physics so as to increase the relevance of their teaching of that subject. Dr. Darrell Marks, Department of Physics.

UNIVERSITY OF IDAHO, Moscow 83843; Physical Science(Introductory Physical Science materials); summer: 8 weeks, June 9 - August 1, 1969; academic year 1969-70: 18 meetings; 64 junior high school teachers from school districts throughout Idaho. Teachers will receive training in physical science and in the IPS curriculum and will be assisted in using IPS in their schools. Dr. Michael E. Browne, Department of Physics.

ILLINOIS

GREENVILLE COLLEGE, Greenville 62246; Physics; summer 1969: 5 training activities for teachers--DePaul University (6/30-8/8), Eastern Illinois University (6/23-8/1), Illinois State University (6/16-7/25), Southern Illinois University at Edwardsville (6/23-8/15), Western Illinois University (6/23-8/1); coordinated academic year program of meetings and classroom visits centered at 9 sites, those above plus Lake Forest College, Monmouth College, Northern Illinois University and Southern Illinois University at Carbondale; 20 teachers at each site from Illinois high schools. This is a statewide effort in cooperation with the Illinois State Department of Education in increasing the quality and quantity of physics instruction in the schools of the State. Dr. Charles M. Weller, Department of Secondary Education, University of Illinois, Urbana 61822.

ILLINOIS INSTITUTE OF TECHNOLOGY, Chicago 60616; Mathematics; spring 1969: 16 weeks, February 3 - May 31; academic year 1969-70: 16 meetings each semester; 16 secondary school teachers and 60 students for demonstration and test classes from Chicago inner-city public high schools. Especially selected materials in mathematics will be demonstrated and discussed with teachers from inner-city high schools. Dr. L. A. Machtinger, Department of Mathematics.

NORTHWESTERN UNIVERSITY, Evanston 60202; Elementary School Science (Science Curriculum Improvement Study materials); summer: 4 weeks, June 16 - July 11, 1969; academic year 1969-70: continuing program including 18 meetings; 125 teachers from public schools of Evanston District #65, City of Chicago, Kenilworth District #38, and the Chicago Catholic Archdiocese. The purposes of this project are to initiate and implement a new science curriculum (SCIS) in the primary and intermediate grades of the cooperating school districts. Professor Herman Cember, Department of Civil Engineering.

ROOSEVELT UNIVERSITY, Chicago 60605; Physical Science (Introductory Physical Science and Physical Science II materials); summer: 2 weeks, August 18-29, 1969; academic year 1969-70: 20 meetings; 32 junior high school teachers and 24 senior high school teachers from the Chicago area. This is the continuation of a project to prepare teachers for working with newly developed PS II as well as IPS materials. Dr. Robert W. Estin, Department of Physics.

UNIVERSITY OF ILLINOIS, Urbana 61801 (with Los Angeles City and San Bernardino County public schools); Mathematics (UICSM); summer: 6 weeks, June 23 - July 31, 1969, in California; academic year 1969-70: 4 meetings classroom visits by project staff; 30 teachers from Los Angeles City and San Bernardino County public schools. Los Angeles participating teachers will receive training in a special UICSM curriculum and will be assisted by resident coordinators in introducing the materials into their classrooms. Director: Professor Max Beberman, University of Illinois Committee on School Mathematics, 1210 West Springfield, Urbana, Illinois 61801. (This project is also listed under CALIFORNIA.)

UNIVERSITY OF ILLINOIS, Urbana 61801 (with State of Hawaii Public Schools); Mathematics (UICSM); summer: 6 weeks, June 30 - August 8, 1969, in Honolulu; academic year 1969-70: 32 meetings; 30 Hawaii junior high school teachers. Participating teachers will receive special training in UICSM materials and in the implementation of various UICSM courses. Director: Professor Max Beberman, University of Illinois Committee on School Mathematics, 1210 West Springfield, Urbana, Illinois 61801. (This project is also listed under HAWAII.)

UNIVERSITY OF ILLINOIS, Urbana 61801 (with Philadelphia Public Schools); Mathematics (UICSM); summer: 6 weeks, June 30 - August 8, 1969, in Philadelphia, 40 high school algebra teachers; 6 weeks, June 30 - August 8, 1969, at University of Illinois - 25 junior high school mathematics teachers; academic year: 40 weeks, September 3, 1969 - June 26, 1970, in-service teacher training activities in Philadelphia, 65 teachers from Philadelphia high schools. Teachers in this continuing program will be assisted in the classroom implementation of UICSM materials by trained resident coordinators. Director: Professor Max Beberman, University of Illinois Committee on School Mathematics, 1210 West Springfield, Urbana, Illinois 61801. (This project is also listed under PENNSYLVANIA.)

WEBSTER COLLEGE, St. Louis, Missouri 63119 (with Chicago Public Schools); Mathematics (Madison Project materials); summer: 2 weeks, August 18-29, 1969, in Chicago; academic year 1969-70: 30 meetings, classroom visits, and other teacher training activities under the direction of a resident coordinator; 40 teachers in the summer from selected Chicago schools, concentrated program of activities for teachers and students in 3 pilot schools during the academic year. Director: Dr. Robert B. Davis, Department of Mathematics, Syracuse University, Syracuse, New York 13210; Chicago contact: Mrs. Evelyn F. Carlson, Associate Superintendent, Chicago Board of Education. (This project is also listed under MISSOURI.)

INDIANA

DEPAUW UNIVERSITY, Greencastle 46135; Mathematics (UICSM); summer: 6 weeks, June 16 - July 25, 1969; academic year 1969-70: 30 meetings; 25 high school mathematics teachers from Putnam and neighboring counties. Mathematics teachers from 8 counties will be trained in the content and use of UICSM so as to introduce those materials into the curriculum. Professor John R. Anderson, Mathematics Department.

INDIANA STATE UNIVERSITY, Terre Haute 47809; Physical Science and Earth Science; summer: 8 weeks, June 9 - August 1, 1969; coordinated program during the 1969-70 academic year including 32 meetings; 40 teachers from the Indianapolis Public and Parochial School Systems. Special training will prepare teachers to introduce and improve junior high school courses in physical and earth sciences. Dr. John C. Hook, Department of Geography-Geology.

KANSAS

KANSAS STATE TEACHERS COLLEGE, Emporia 66801; Elementary School Science (AAAS Science--A Process Approach); summer: 5 weeks, July 21 - August 22, 1969; academic year 1969-70: 12 meetings; 30 elementary school teachers and 5 school principals from twelve school districts in the Flint Hills Educational Research and Development Association of the State of Kansas. Training and consultation will enable the participants to introduce the AAAS materials in their classrooms during the 1969-70 academic year. Dr. William S. Lashier, Department of Education.

KENTUCKY

ASBURY COLLEGE, Wilmore 40390; Mathematics; summer: 3 weeks, August 4-22, 1969; academic year 1969-70: 10 meetings; 26 junior and senior high school teachers from Jessamine, Woodford, Mercer, and Fayette Counties. Improved science laboratory instruction will be brought about through special training for teachers in laboratory procedures and techniques. Dr. C. B. Hamann, Division of Science and Mathematics.

LOUISIANA

NICHOLLS STATE COLLEGE, Thibodaux 70301; Mathematics; summer: 8 weeks, June 16 - August 8, 1969; academic year 1969-70: 30 meetings; 50 elementary and junior high school teachers, principals, and supervisors from Jefferson and Orleans Parishes and surrounding area. The mathematics program in cooperating schools will be improved through the provision of special training courses for selected teachers. Dr. Merlin M. Ohmer, Department of Mathematics.

LOUISIANA STATE UNIVERSITY, Baton Rouge 70803; Earth Science; summer: 9 weeks, June 9 - August 8, 1969; followed by a one-week meeting of 5 selected participants, August 11-15; academic year 1969-70: 6 meetings; 22 junior high school teachers from East Baton Rouge Parish schools. This is the second year of a two-year program to train a group of teachers in earth science so that they can provide in-service training to other teachers and assist in assembling a comprehensive curriculum guide in earth science to meet local needs. Professor Harold V. Andersen, Geology Department.

LOUISIANA STATE UNIVERSITY, Baton Rouge 70803; Chemistry (CHEM Study materials); summer: 9 weeks, June 9 - August 8, 1969; academic year 1969-70: 6 meetings; 22 high school chemistry teachers from the Alexandria-Baton Rouge area. Local school systems will be assisted in improving their chemistry programs by this project which will provide subject matter training and supervision for teachers. Dr. Darthon V. Wells, Department of Chemistry.

NORTHWESTERN STATE COLLEGE, Natchitoches 71457; Elementary School Science (AAAS Science--A Process Approach and Elementary Science Study materials); two sessions summer 1969: 2 weeks, June 16-27 for 25 teachers, and 1 week, July 7-11 for 20 teachers; academic year 1969-70: 6 meetings; teachers from Bienville, Bossier, Caddo, Concordia, Rapides, St. Martin, and Winn Parishes. Participants will study AAAS and ESS and use these materials in their classrooms during the following school year. Dr. Ronald T. Dennis, Department of Education.

NORTHWESTERN STATE COLLEGE, Natchitoches 71457; Biology (Biological Science Curriculum Study - Green Version); summer: 9 weeks, June 2 - August 1, 1969; academic year 1969-70: classroom visits by project staff and 3 meetings; 24 biology teachers and 30 students from cooperating Louisiana parishes. Participants will study BSCS Green Version and related teaching techniques, and will teach BSCS in their classes during the 1969-70 academic year. Dr. Roderick Outland, Department of Biological Sciences.

UNIVERSITY OF SOUTHWESTERN LOUISIANA, Lafayette 70501; Junior High School Science;summer: 8 weeks, June 11 - August 1, 1969; academic year 1969-70: 8 meetings; 24 junior high school science teachers from the schools of St. Landry Parish. The participants will receive training to improve the general science programs in county schools and will serve as resource personnel for other science teachers. Dr. Edmund D. Keiser, Jr., Department of Biology.

MARYLAND

GOUCHER COLLEGE, Towson 21204; Computer Mathematics; summer: 6 weeks, June 30 - August 8, 1969, 30 teachers; academic year 1969-70: 7 teachers and 105 students in experimental classes and 23 teachers in discussion groups on curricular problems; participants from the Baltimore County Public School System, St. Paul's School, and the Gilman School. Teachers will be prepared to introduce computer-related courses into the secondary schools of the Baltimore area. Professor Dorothy L. Bernstein, Mathematics Department.

UNIVERSITY OF MARYLAND, College Park 20742; Elementary School Mathematics; summer: 6 weeks, June 23 - August 1, 1969; academic year 1969-70: 2 meetings, classroom visits by project staff; 40 elementary school in-service leaders from all school districts of Maryland. Representatives from each public school district in Maryland will be prepared to act as leaders in the in-service teaching of University of Maryland Mathematics Project materials to other teachers. Professor James Henkelman, Mathematics Project.

MASSACHUSETTS

EASTERN NAZARENE COLLEGE, Wollaston 02170; Junior High School Science (Intermediate Science Curriculum Study materials); summer: 6 weeks, July 7 - August 15, 1969; academic year 1969-70: 30 meetings; 40 junior high school teachers, plus students (for demonstration classes) from schools of Quincy and Stoughton Public School Systems. Teachers will receive instruction and laboratory training in the ISCS science curriculum and will teach it during the following academic year in classrooms of participating schools. Dr. John Jablonski, Department of Education.

BRIDGEWATER STATE COLLEGE, Bridgewater 02324; Earth Science and Geography (Earth Science Curriculum Project and High School Geography Project materials); summer: 6 weeks, July 7 - August 15, 1969; academic year 1969-70: 30 meetings; 22 junior high school science teachers and 23 senior high school geography teachers from Avon, Brockton, North Easton, Plymouth-Carver, Stoughton, and West Bridgewater School Systems. This program will assist the implementation of ESCP in the junior high schools and HSGP in the senior high schools of the cooperating school systems. Dr. Emanuel Maier, Department of Earth Sciences and Geography.

UNIVERSITY OF MASSACHUSETTS, Amherst 01002; Biology; summer: 6 weeks, June 24 - August 2, 1969; academic year 1969-70: 3 meetings, plus project staff visits to schools; 25 teachers from the New England area. Biology teachers will study the potentialities and uses of greenhouses as teaching aids. Dr. George B. Goddard, Department of Plant and Soil Sciences.

UNIVERSITY OF MASSACHUSETTS, Amherst 01002; Elementary School Science (Science Curriculum Improvement Study materials); summer: 3 weeks, June 18 - July 11, 1969; academic year 1969-70: 15 meetings; 35 elementary school teachers and 60 students (for demonstration classes) from schools of Amherst and Greenfield. Teachers will receive training in the SCIS elementary science program and will teach SCIS in their classrooms. Dr. Richard D. Konicek, School of Education.

MICHIGAN

CENTRAL MICHIGAN UNIVERSITY, Mt. Pleasant 48858; Mathematics; spring: 18 Saturday meetings, February 8 - June 7, 1969; summer: 8 weeks, June 17 - August 9, 1969; fall: 18 Saturday meetings, September 16, 1969 - January 26, 1970; 30 elementary school teachers from a seven-county area of west central Michigan. Teachers will study mathematics content courses and be trained to serve as elementary mathematics specialists in 28 school districts. Dr. Edward Whitmore, Department of Mathematics.

EASTERN MICHIGAN UNIVERSITY, Ypsilanti 48197; Multiple Sciences; summer: 9 weeks, June 16 - August 19, 1969; academic year 1969-70: 30 meetings; 30 teachers from Macomb County. Teachers from cooperating school districts will study an integrated science course which emphasizes the investigative approach and in a later phase of the project will concentrate their study on a specific one of several new science curricula. Dr. Richard A. Giles, Department of Biology.

MICHIGAN STATE UNIVERSITY, East Lansing 48823; Elementary School Science (Science Curriculum Improvement Study materials); summer: 3 weeks, August 4-22, 1969; coordinated program during the 1969-70 academic year, including classroom visits by project staff and 180 meetings; 50 elementary teachers and 50 students (for micro-teaching and demonstration classes) from East Lansing, DeWitt, Grand Ledge and Perry public schools. Teachers will study the content and methodology of SCIS and will be supervised in introducing these materials in their classrooms. Dr. Glenn D. Berkheimer, Science and Mathematics Teaching Center.

MICHIGAN STATE UNIVERSITY, East Lansing 48823; General Science; academic year 1969-70: continuous resident consultant, 5 short in-service workshops fall semester, in-service meetings and demonstration classes second semester. A resident consultant will teach classes and conduct a series of workshops during the fall semester, then teach two demonstration classes during the spring semester as part of an extended plan for introduction of new curricula into the Okemos Public Schools.
Dr. Wayne Taylor, Science and Mathematics Teaching Center.

MICHIGAN STATE UNIVERSITY, East Lansing 48823; Mathematics and Science; summer: 6 weeks, June 23 - August 13, 1969, 30 teachers and 120 students; coordinated program during academic year 1969-70, including a complex of academic year study for experienced teachers, classroom visits by project staff, in-service and pre-service teacher training activities; also supported by the U. S. Office of Education; teachers and students from inner-city secondary schools of Battle Creek, Ecorse, Grand Rapids, Inkster, Jackson, Lansing, Muskegon, Pontiac, and Saginaw;
Dr. Irvin E. Vance, Department of Mathematics.

UNIVERSITY OF MICHIGAN, Ann Arbor 48104; Mathematics; summer: 6 weeks, July 7 - August 14, 1969; academic year 1969-70: 30 meetings; 8 teachers and 80 students from Detroit public schools. This project provides for a selected group of high school teachers to study mathematics topics and computer programming material which can serve as a mean for increasing the urban students' motivation for studying mathematics. Students from the inner-city will be instructed in demonstration classes.
Professor J. L. Ullman, Department of Mathematics.

WESTERN MICHIGAN UNIVERSITY, Kalamazoo 49001; Physical Science; academic year: 30 one-day meetings, September 8, 1969 - May 13, 1970; 24 elementary school teachers and 6 junior high school science teachers from the City of Royal Oak School District. Teachers will receive subject matter instruction in the physical sciences, inquiry-oriented laboratory experiences and training for leadership roles in the in-service programs of their schools. Dr. George G. Mallison, Dean, School of Graduate Studies.

MINNESOTA

ST. CLOUD STATE COLLEGE, St. Cloud 56301; Economics; summer: 5 weeks, June 16 - July 18, 1969; academic year 1969-70: 30 meetings; 30 teachers from St. Cloud schools. Teachers will be trained in economics, examine new economics education curriculum projects and incorporate economics materials more fully in their teaching the following year. Professor Andrew T. Nappi, Department of Economics.

MISSISSIPPI

MISSISSIPPI STATE COLLEGE FOR WOMEN, Columbus 39701; Biology (Biological Science Curriculum Study - Green Version); summer: 8 weeks, June 9 - August 1, 1969; academic year 1969-70: 5 meetings, classroom visits by project staff; 24 teachers from 21 counties in Mississippi and Alabama. Lectures, laboratory procedures, and demonstration classes will assist teachers to use the BSCS Green Version materials. Dr. R. E. Garth, Department of Biological Sciences.

MISSISSIPPI STATE COLLEGE FOR WOMEN, Columbus 39701; Elementary School Science (AAAS Science--A Process Approach); summer: 2 weeks, August 4-15, 1969; academic year 1969-70: 10 meetings, 30 teachers from Pickens County, Alabama and Columbus, Mississippi. Teachers will study AAAS materials preparatory to teaching it in their schools during the academic year. Dr. R. E. Garth, Department of Biological Sciences.

UNIVERSITY OF SOUTHERN MISSISSIPPI, Hattiesburg 39401; Earth Science (Earth Science Curriculum Project materials); summer: 6 weeks, June 16 - July 25, 1969; academic year 1969-70: 30 meetings plus classroom supervision by project staff; 60 secondary school teachers, supervisors, and consultants from schools in Biloxi, Meridian, and nearby areas. Teachers will be trained in the methods and content of ESCP materials so as to improve earth science teaching in cooperating school districts. Dr. Isadore L. Sonnier, Department of Science Education.

MISSOURI

CENTRAL MISSOURI STATE COLLEGE, Warrensburg 64093; Chemistry (CHEM Study materials); summer: 8 weeks, June 16 - August 8, 1969; academic year 1969-70: staff visits to high schools and 3 conferences; 25 high school teachers from Kansas City and west central Missouri. Participants will be instructed in a modern approach to teaching chemistry, receive training in motivating students toward chemistry and will implement CHEM Study in their classes. Dr. Joe M. Hopping, Department of Chemistry.

SOUTHEAST MISSOURI STATE COLLEGE, Cape Girardeau 63701; Chemistry (CHEM Study materials); 8 weeks, June 16 - August 8, 1969; academic year 1969-70: 2 meetings, classroom visits by project staff; 25 teachers from St. Louis and counties in southeast Missouri. Teachers will receive instruction in the use of CHEM student materials and the Chemistry Curriculum Guide of the Missouri State Department of Education. Dr. E. Lawrence Bahn, Jr., Department of Chemistry.

UNIVERSITY OF MISSOURI, Rolla 65401; Mathematics (Computer Science); summer: 8 weeks, June 9 - August 1, 1969; academic year 1969-70: 16 meetings; 30 secondary school teachers from various schools in southwest Missouri. Teams of participants will be instructed in computer science, with emphasis on multi-curriculum applications of digital computer; each team will establish a course of study for its own school during 1969-70. Professor Ralph E. Lee, Director, Computer Science Center.

WEBSTER COLLEGE, St. Louis 63119; Elementary School Science and Mathematics (AAAS, ESS, Madison Project materials); spring 1969: 18 sessions; summer: two-week workshop, July 7-18, 1969; academic year 1969-70: 36 sessions; 22 elementary school teachers from the University City School District. Teachers will receive instruction in curricular materials produced by specified curriculum projects, will observe and practice mathematics-science in laboratories and will use the laboratory techniques and materials in pilot schools. Dr. Charles F. Madden, Associate Dean for Curriculum and Research.

WEBSTER COLLEGE, St. Louis 63119; Mathematics (Madison Project materials). Four projects of varying design will be conducted in large cities to train teachers in the content and teaching philosophy of the Madison Project. Two-week summer workshops will be held in Chicago, St. Louis, and New York City, August 18-29, 1969. Coordinated academic year programs, each with a complex of instructional activities including special concentration on teacher training in pilot schools, will be held during 1969-70 in these cities. A similar academic year program will be presented in Philadelphia. Director; Dr. Robert B. Davis, Department of Mathematics, Syracuse University, Syracuse, New York 13210. (See entries under ILLINOIS, MISSOURI, NEW YORK, AND PENNSYLVANIA for information on individual projects.)

WEBSTER COLLEGE, St. Louis 63119; Mathematics (Madison Project materials); summer: 2 weeks, August 18-29, 1969; academic year 1969-70: 40 Saturday meetings, plus a complex of other teacher training activities, under the direction of a resident coordinator; 40 teachers during the summer from selected St. Louis schools, students for demonstration classes; concentrated program of activities in a pilot school during academic year. Director: Dr. Robert B. Davis, Department of Mathematics, Syracuse University, Syracuse, New York 13210; St. Louis contact: Dr. Samuel Shepard, Jr., Assistant Superintendent, St. Louis Public Schools. (See preceding entry.)

NEBRASKA

CREIGHTON UNIVERSITY, Omaha 68131; Biological Science(Ecology); summer: 6 weeks, June 16 - July 25, 1969; academic year 1969-70: 10 meetings; 32 elementary teachers from Omaha region schools. The Fontenelle Forest Nature Center will serve as a facility to provide teachers with classroom and field competence in natural science. Dr. Allen D. Schlesinger, Department of Biology.

NEW HAMPSHIRE

DARTMOUTH COLLEGE, Hanover 03755; Elementary School Science (Elementary Science Study materials); summer: 4 weeks, July 28 - August 22, 1969; academic year 1969-70: 5-8 meetings, classroom observation by participants, and classroom visits by project staff; 40 new or experienced teachers from New Hampshire and Vermont. Inexperienced teachers will receive training in ESS materials while experienced teachers will be trained as in-service instructors and in curriculum development work. Professor Donald Campbell, Department of Education.

NEW JERSEY

DREW UNIVERSITY, Madison 07940; Computer Science; academic year 1969-70: 15 seminars and 15 laboratory sessions for 16 teachers from local high schools, also introduction of experimental laboratory-oriented computer course for 20 secondary school students of Governor Livingston High School. Participants will explore improved teaching in courses involving the computer; as an aspect, a computer course will be introduced into the curriculum of one of the participating schools. Dr. Charles W. Lytle, Director of the Computer Center.

NEWARK STATE COLLEGE, Union 07083; Elementary School Science (AAAS Science--A Process Approach and Science Curriculum Improvement Study materials); summer: 3 weeks, August 11-29, 1969; academic year 1969-70: 33 meetings; 60 elementary school teachers and administrators from Caldwell, West Caldwell and adjacent areas. Teacher-administrator teams will receive training in two new elementary science programs and will teach one of them during the following academic year. Dr. Frederic G. Arnold, Department of Science.

STEVENS INSTITUTUE OF TECHNOLOGY, Hoboken 07030; Elementary School Science (Elementary Science Study materials); spring and fall 1969: 40 classroom visits; summer: 4 weeks, July 7 - August 1, 1969; 40 elementary school teachers from the Orange Public School System. The present use of ESS materials in the Orange Public School System will be analyzed and an expanded implementation of these materials will be brought about. Dr. Edward A. Friedman, Department of Physics.

NEW MEXICO

EASTERN NEW MEXICO UNIVERSITY, Portales 88130; Earth Science (Earth Science Curriculum Project materials); summer: 5 weeks, July 20 - August 24, 1969; academic year 1969-70: 10 meetings; 36 secondary school teachers from eastern New Mexico-western Texas area. With use of facilities of the Philmont Ranch, this project will instruct secondary school teachers in ESCP methods and materials for the introduction of earth science courses in cooperating schools. Dr. William D. Pitt, Department of Geology.

NEW MEXICO STATE UNIVERSITY, Las Cruces 88001; Engineering; summer 1969: 10 weeks, June 9 - August 15, with coordinated program during the 1969-70 academic year for 10 teachers from Dona Ana County; summer 1970: 3 weeks, June 8-26, for 36 participants from New Mexico and adjoining states. Teachers will prepare and organize materials for use in a pilot program of concept-oriented instruction. Dr. Roger M. Zimmerman, College of Engineering.

NEW YORK

BROOKLYN COLLEGE OF THE CITY UNIVERSITY OF NEW YORK, Brooklyn 11210; Mathematics; summer: 6 weeks, June 20 - August 8, 1969; academic year 1969-70: 15 Saturday meetings plus classroom visits by project staff; 40 junior high school teachers from the New York City School System. The participating teachers will be trained in junior high school mathematics and modern high school algebra, and will develop detailed plans for use of these materials in their own classes. Dr. Lester L. Gavurin, Department of Mathematics.

YORK COLLEGE OF THE CITY UNIVERSITY OF NEW YORK, Queens 11365; Physics; summer: 6 weeks, June 30 - August 11, 1969; academic year 1969-70: 244 meetings, 8 secondary school science teachers and 30 students from Jamaica and Richmond Hill High Schools. College scientistswill train secondary school teachers and inner-city high school students in a physics program which will involve the college, the schools and industrial resources. Dr. Frank R. Pomilla, Division of Natural Sciences.

COLLEGE CENTER OF THE FINGER LAKES, Corning 14830; Ecology(New York State Biology Curriculum); summer: 6 weeks, July 1 - August 15, 1969; academic year 1969-70; 16 meetings; 30 high school biology teachers from school districts in the southern tier of New York State. Teachers will be trained in ecology and its application in teaching the revised New York State biology curriculum. Dr. Louise F. Potter, Department of Biology.

HOFSTRA UNIVERSITY, Hempstead 11550; Elementary School Science (AAAS Science--A Process Approach); summer: 3 weeks, June 30-July 18, 1969; academic year 1969-70: 30 meetings; 30 elementary school teachers, administrators, and supervisors, and 5 junior high school teachers from schools in the Levittown School District. Participants will receive training in formulating behavioral objectives, activities, and specific process skills in science and will later instruct other teachers. Dr. Jerome J. Notkin, Director, Science and Mathematics Learning Center.

ST JOHN'S UNIVERSITY, New York 11432; Elementary School Science (AAAS Science--A Process Approach and Science Curriculum Improvement Study materials); summer: 3 weeks, June 30 - July 18, 1969; academic year 1969-70: 2 meetings, plus classroom visits by project staff; 30 elementary school teachers from three Long Island public school systems and the Diocese of Brooklyn. Teachers will receive training in two new elementary science programs and will teach one of them during the following academic year in Metropolitan New York elementary classrooms. Dr. Paul L. DeBiase, Department of Biology.

STATE UNIVERSITY OF NEW YORK, Albany 12203; General Science (Intermediate Science Curriculum Study materials); summer: 3 weeks, August 11-30, 1969; academic year 1969-70: 16 meetings; 20 junior high school science teachers from the Albany Public School System. Teachers will receive instruction in materials of the Intermediate Science Curriculum Project and will teach that program during the academic year. Professor Thomas Boehm, Department of Science Education.

STATE UNIVERSITY COLLEGE, Buffalo 14222; General Science; summer: 2 weeks, August 18-29, 1969; academic year 1969-70: 18 meetings; 20 teachers from Niagara Falls during the summer and 35 during the academic year. Participants will study the inquiry approach in science teaching and will receive subject matter training so as to implement a curriculum guide in general science. Professor Richard J. Foster, Department of General Science.

STATE UNIVERSITY OF NEW YORK, Stony Brook 11790; Elementary School Science (Elementary Science Study, Science Curriculum Improvement Study and Quantitative Approach in Elementary School Science materials); spring 1969: 4 meetings, March 8 - April 26; summer: 2 weeks, August 18-29, 1969; academic year 1969-70: 9 meetings; 75 elementary school teachers from Suffolk County. Teachers will be trained in new curriculum materials and will be supervised in introducing these in pilot classrooms during 1969-70. Professor Theodore A. Bredderman, Department of Education.

SYRACUSE UNIVERSITY, Syracuse 13210; Mathematics (Madison Project materials); summer: 6 weeks, July 21 - August 29, 1969: 36 teachers from Chicago, St. Louis, Los Angeles, New York City, Philadelphia, San Diego, and Washington, D. C. experienced with Madison Project materials and methodological approaches, will participate in a 4-week advanced training session at Syracuse University; during the 2 additional weeks each participant will attend one of the three 2-week Madison Project workshops scheduled at that time in Chicago, New York City and St. Louis. Dr. Robert B. Davis, Department of Mathematics.

WALDEMAR MEDICAL RESEARCH FOUNDATION, INC. Woodbury 11797; Biological Science; summer: 6 weeks, June 30 - August 8, 1969, 5 teachers and 75 students; academic year: 16 sessions, February - June 1970, 25 teachers and 125 students; participants from New York City and Long Island. Teachers will be instructed in the methods of research and will be assisted in organizing and directing scientific projects for secondary school student research teams. Dr. Leo Gross, Director, Department of Educational Programs.

WEBSTER COLLEGE, St. Louis, Missouri 63119; (with New York City Public Schools); Mathematics (Madison Project materials); summer: 2 weeks, August 18-29, 1969, in New York City; academic year 1969-70: 40 Saturday meetings, classroom visits by project staff and other teacher training activities under the direction of a resident coordinator; 150 teachers in summer from selected New York schools, concentrated program of activities for teachers and students in pilot schools in academic year. Director: Dr. Robert B. Davis, Department of Mathematics, Syracuse University, Syracuse, New York 13210; New York City contact: Mr. George Grossman, Director of Mathematics, Board of Education, Brooklyn, New York 11001. (This project is also listed under MISSOURI.)

NORTH CAROLINA

DUKE UNIVERSITY, Durham 27708; Physical Science (Quantitative Physical Science materials); summer: 6 weeks, July 18 - August 23, 1969; academic year 1969-70: 18 meetings; 60 participants, mostly teachers, some supervisors, from Montgomery County, Maryland: Clarke County, Georgia; and Durham, North Carolina. Teachers will receive training in basic physical science and QPS teaching methodology and curriculum materials and will use the latter in their schools during the academic year. Dr. Sherwood Githens, Jr., Department of Education.

EAST CAROLINE UNIVERSITY,Greenville 27834; Biological Science(Biological Science Curriculum Study - Special Materials); summer: 6 weeks, June 9 - July 18, 1969; academic year 1969-70: 9 meetings; 32 high school biology teachers from schools of eastern North Carolina. Teachers will receive training in the Special Materials of the BSCS program and will teach at least one class using those materials during the academic year. Dr. Carolyn H. Hampton, Department of Science Education.

EAST CAROLINE UNIVERSITY, Greenville 27834; Earth Science; summer: 8 weeks, June 9 - August 1, 1969; academic year 1969-70: 6 meetings; 80 junior high school earth science teachers from schools of eastern North Carolina. This is a pilot program to improve the subject matter competencies of the earth science teachers of North Carolina. Dr. Floyd E. Mattheis, Department of Science Education.

NORTH DAKOTA

UNIVERSITY OF NORTH DAKOTA, Grand Forks 58201; Earth Science (Earth Science Curriculum Project materials); summer: 4 weeks, August 3-30, 1969; academic year 1969-70: 16 meetings; 24 secondary school earth science teachers from Grand Forks and neighboring school systems. Earth Science will be presented as a unified, interdisciplinary investigation according to the ESCP format and participants will be assisted in implementing ESCP in their classes during the ensuing academic year. Dr. F. D. Holland, Jr., Department of Geology

OHIO

OHIO STATE UNIVERSITY, Columbus 43201; Earth Science (Earth Science Curriculum Project materials); summer: 4 weeks, July 28 - August 22, 1969; academic year 1969-70: 8 Saturday meetings; 36 junior high school teachers from Richland County public schools. This project will improve the earth science subject matter competence of teachers who will be trained to introduce ESCP instructional materials in participating schools. Dr. Victor J. Mayer, Department of Geology.

OHIO UNIVERSITY, Athens 45701; Geology; summer: 6 weeks, July 21 - August 29, 1969; academic year 1969-70: 16 meetings; 30 secondary school teachers from Lancaster, Marietta, Fairfield County and Washington County public schools. Participants will study subject matter in earth science, with emphasis on ESCP materials and will implement ESCP in their schools in academic year 1969-70. Dr. Jack Baker, Department of Geography and Geology.

OHIO UNIVERSITY, Athens 45701; Economics; summer: 8 weeks, June 16 - August 8, 1969; academic year 1969-70: 20 meetings; 25 secondary school teachers from the Cleveland City School System. Experienced teachers will study economics and economic education courses, will analyze the Economics Curricular Materials approach to teaching economics, will then teach these materials in their classes and act as consultants and instructors for other Cleveland school teachers. Dr. Kenneth Light, Department of Economic Education.

UNIVERSITY OF AKRON, Akron 44304; Earth Science; summer: 10 weeks, June 23 - August 29, 1969; academic year 1969-70: 15 meetings; 20 8th grade teachers from Akron public schools. Participants will study a series of courses designed to prepare them to teach, in 1969-70, recently adopted school earth science instructional programs. Professor Jim L. Jackson, Department of Geology.

OKLAHOMA

EAST CENTRAL STATE COLLEGE, Ada 74820; Elementary School Science; summer: two 3-week workshops, June 16 - July 3 and July 14 - August 1, 1969; academic year 1969-70: 18 meetings; 60 elementary school teachers from the Seminole, Wewoka, Sulphur, Byng, Ada Holdenville, and Pauls Valley public schools. Participants will study the SCIS (Science Curriculum Improvement Study) and ESS (Elementary Science Study) materials and prepare themselves to advise school districts implementing these materials. Professor Don Kellogg, Department of Physics.

OKLAHOMA STATE UNIVERSITY, Stillwater 74074; Economics; summer 1969: 2 weeks, June 2-16; academic year 1969-70: 54 meetings plus staff visits to classrooms; summer 1970: 2 weeks, June 2-16; 54 elementary and secondary school teachers from Ponca City, Bartlesville, and Tulsa public schools and Chilocco Indian School. Instructional materials in economics will be developed and integrated into the social studies courses of the cooperating school systems. Dr. Clayton Millington, College of Business.

SOUTHWESTERN STATE COLLEGE, Weatherford 73096; Elementary School Science; summer: 3 weeks, June 30 - July 18, 1969; academic year 1969-70: 9 meetings; 40 elementary school teachers and administrators from the Clinton, Weatherford, and Yukon school systems. Participants will receive instruction in two elementary science programs-- Science Curriculum Improvement Study (SCIS) and Elementary School Science (ESS) in this second phase of an implementation plan for these materials. Professor M. C. Weber; Department of Science Education.

OREGON

EASTERN OREGON COLLEGE, La Grande 97850; Elementary School Science (AAAS Science--A Process Approach); summer: 2 weeks, June 23 - July 5, 1969; academic year 1969-70: classroom supervision by project staff, one seminar; 36 elementary school teachers, principals, and assistant superintendents from the Pendleton and La Grande Public School Districts. Participants will receive training in the AAAS Science--A Process Approach materials and will supervise and teach this program in their classrooms during the academic year. Dr. Virgil A. Bolen, Department of Physical Science.

PORTLAND STATE COLLEGE, Portland 92707; Elementary School Science (AAAS Science--A Process Approach); summer: three 2-week sessions, June 23 - July 5, July 17-18 and July 21 - August 1, 1969; academic year 1969-70: 2 meetings, 90 elementary teachers from Portland, Oregon City, and West Linn public schools. The program will train 30 elementary teachers in each of three school districts in the AAAS elementary school science materials which they will then use in their classrooms in 1969-70. Dr. Erwin F. Lange, Department of General Science.

PENNSYLVANIA

MOUNT MERCY COLLEGE, Pittsburgh 15213; Elementary School Science; summer: two 3-week sessions, June 23 - July 11 and July 14 - August 1, 1969; academic year 1969-70: 15 meetings; 90 elementary school teachers and 10 elementary school supervisors from the Pittsburgh public schools. The project will develop a corps of key teachers and supervisors who will assume leadership roles in implementing the new science curriculum adopted by the Pittsburgh Public Schools. Professor Maurice Whalen, Department of Biology.

TEMPLE UNIVERSITY, Philadelphia 19122; Physical Science (Intermediate Science Curriculum Study materials); summer: 6 weeks, June 30 - August 7, 1969; academic year 1969-70: 30 meetings; 40 junior high school teachers from Philadelphia public schools. Selected teams of teachers will be trained in the use of ISCS materials and will introduce the curriculum into 20 schools in the city of Philadelphia. Dr. Frank X. Sutman, Science Education Department.

UNIVERSITY OF ILLINOIS, Urbana 61801 (with Philadelphia Public Schools); Mathematics (UICSM); summer: 6 weeks, June 30 - August 8, 1969, in Philadelphia, 40 high school algebra teachers; 6 weeks, June 30 - August 8, 1969, at University of Illinois, 25 junior high school mathematics teachers; academic year: 40 weeks, September 3, 1969 - June 26, 1970, in-service teacher training activities in Philadelphia, 65 teachers from Philadelphia high schools. The program offers training and classroom experience with the UICSM courses to 40 elementary algebra teachers and 25 teachers of under-achieving 7th and 8th grade students. Director: Professor Max Beberman, University of Illinois Committee on School Mathematics, 1210 West Springfield, Urbana, Illinois 61801; Philadelphia contact: Mr. Karl S. Kalman, Director of Mathematics, Philadelphia Public Schools, 21st and Parkway, Philadelphia 19103. (This project is also listed under ILLINOIS.)

WEBSTER COLLEGE, St. Louis, Missouri 63119 (with Philadelphia Public Schools); Mathematics (Madison Project materials); academic year 1969-70, in Philadelphia: after-school and Saturday sessions for Philadelphia teachers, classroom visits by project staff, various other teacher training activities to be conducted under the direction of a resident coordinator; special concentration of activities for teachers and students in pilot schools. Director: Dr. Robert B. Davis, Department of Mathematics, Syracuse University, Syracuse, New York 13210; Philadelphia contact: Mr. Karl S. Kalman, Director of Mathematics, Philadelphia Public Schools, 21st and Parkway, Philadelphia 19103. (This project is also listed under MISSOURI.)

RHODE ISLAND

UNIVERSITY OF RHODE ISLAND, Kingston 02881; Computer Science; January 1 - December 31, 1969: 4 training courses; 120 teachers and administrators, 240 students from Rhode Island high schools. Participants will receive training in computer science through in-service training and classroom instruction. Dr. William J. Hemmerle, Director, Computer Laboratory.

SOUTH CAROLINA

MORRIS COLLEGE, Sumter 29150; Mathematics; summer: 6 weeks, June 20 - August 1, 1969; academic year 1969-70: 36 meetings, consultative services; 30 elementary school teachers from Hampton School District No. 2. Teachers will study in the basic concepts of set theory, the structure and basic properties of the real number system and geometry suitable for elementary grades. Professor James L. Solomon, Jr., Department of Mathematics.

SOUTH DAKOTA

SOUTH DAKOTA STATE UNIVERSITY, Brookings 57006; Elementary School Science (AAAS Science--A Process Approach); summer: two 3-week workshops, June 16 - July 3 and July 28 - August 15, 1969; academic year 1969-70: two 18-week 2-hour seminar series; 40 teachers, principals, and curriculum coordinators, 50 students for microteaching classes, from Sioux Falls schools. Selected school personnel from four pilot schools will receive summer training in the philosophy, rationale and classroom implementation of the AAAS elementary science program and during the following school year will conduct in-service training seminars in the curriculum for other teachers and administrators. Dr. Gerald A. Myers, Department of Botany-Biology.

UNIVERSITY OF SOUTH DAKOTA, Vermillion 57069; Elementary School Science (Elementary School Science materials); summer: 6 weeks, June 15 - July 25, 1969; academic year 1969-70: 7 meetings; 24 teachers, grades 4-8, from Spirit Lake, Iowa, and area schools. Teachers will receive basic science training in the concepts used in the ESS program and will be assisted during the introduction of the material into the intermediate grades of the participating schools. Dr. Robert E. Stevenson, Department of Geology.

TENNESSEE

AUSTIN PEAY STATE UNIVERSITY, Clarksville 37040; Mathematics and Computer Science; summer: 10 weeks, June 5 - August 15, 1969; academic year: 11 meetings, September 15 - December 7, 1969; 20 teachers of high school mathematics from eighteen counties in middle Tennessee and southern Kentucky. The program will increase the subject matter competency of the teachers in calculus, probability, linear algebra, and computer science, will illustrate methods of teaching such materials to high school students, and will prepare the teachers for leadership in curricular reform in their schools. Dr. William G. Stokes, Department of Mathematics.

CHRISTIAN BROTHERS COLLEGE, Memphis 38104; Physical Science (Introductory Physical Science materials); summer: 8 weeks, June 16 - August 8, 1969; academic year: 9 meetings, September 1969 - January 1970; 24 teachers and 30 students (for demonstration classes) from the De Sota County, Mississippi and West Memphis, Arkansas school systems. The project will upgrade the teaching of physical science in two school systems by instructing teachers in IPS materials, with emphasis on laboratory work; demonstration classes will be used. Brother Edward Doody, Science and Mathematics Department.

EAST TENNESSEE STATE UNIVERSITY, Johnson City, 37601, Elementary School Mathematics; academic year: 33 meetings, September 24, 1969 - June 7, 1970; 30 elementary school teachers and 10 elementary school principals from Johnson City. Teachers from ten elementary schools will receive training in mathematics and will be developed as resource people in mathematics for their schools. Dr. Lester C. Hartsell, Department of Mathematics.

MEMPHIS STATE UNIVERSITY, Memphis 38111; Physical Science and Chemistry; summer: 8 weeks, June 16 - August 8, 1969; academic year: weekly subject matter meetings, monthly seminars and consultative classroom visits by project staff, September 13, 1969 - May 30, 1970; 40 teachers from Memphis City and Shelby County schools. Twenty junior high school physical science teachers and 20 high school chemistry teachers will participate in an intensive instructional program to increase their subject matter knowledge and strengthen their classroom presentations to students. Professor J. W. Fox, Department of Chemistry.

MEMPHIS STATE UNIVERSITY, Memphis 38111; Earth Science; summer: 8 weeks, June 9 - August 4, 1969; academic year 1969-70; 18 meetings; 20 teachers from the Shelby County School System. The program will prepare teachers to use the new inquiry-oriented earth science materials and to acquaint them with the content and approach of the new course, Investigating the Earth. Dr. John A. Sobol, Department of Geography.

VANDERBILT UNIVERSITY, Nashville 37203; General Science and Social Science; spring 1969: weekly meetings and workshop sessions; 60 Nashville teachers who were participants in 1968 summer program. This project is an expansion and development of a summer 1968 program which devised and adapted new instructional materials in natural science and social studies to the needs of various inner-city secondary schools of Nashville. Dr. Parker L. Coddington, Director, Office of External Affairs.

TEXAS

EAST TEXAS STATE UNIVERSITY, Commerce 75428; Physical Science; summer: 9 weeks, June 6 - August 8, 1969; academic year 1969-70: 9 meetings; 33 junior high school teachers of 9th grade physical science, plus principals or science supervisors from schools within the service areas of Educational Service Centers VII, VIII, and X in northeast Texas. Participants will receive training in physics and chemistry including laboratory techniques to prepare them to teach material covered in newly adopted textbooks of the State of Texas. Dr. Charles S. Rohrer, Department of Chemistry.

NORTH TEXAS STATE UNIVERSITY, Denton 76203; Elementary School Science (Science Curriculum Improvement Study materials); summer: 1 week, August 25-29, 1969; academic year 1969-70: 16 meetings; 27 teachers, 6 principals and 1 curriculum director from Greenville Independent School District. This project will train teachers and school administrators to implement SCIS materials. Dr. Paul J. Cowan, School of Education.

NORTH TEXAS STATE UNIVERSITY, Denton 76203; Physical Science (Introductory Physical Science materials); summer: 4 weeks, July 14 - August 9, 1969, 15 teachers; academic year 1969-70: 16 meetings, same 15 teachers plus 10 others; all participants from Fort Worth School System. Participants will receive special training in IPS materials in preparation for introducing a revised physical science program. Dr. Paul J. Cowan, School of Education.

UNIVERSITY OF HOUSTON, Houston 77004; Earth Science (Earth Science Curriculum Project materials); summer 1969: 1 week, August 25-30; academic year 1969-70: 80 meetings; summer 1970: 4 weeks, June 1-30; 24 teachers from the Spring Branch and Clear Creek Independent School Districts. Teachers will study ESCP materials in preparation for teaching an earth science course based on the investigative approach during the 1969-70 academic year. Professor Margaret S. Bishop, Geology Department.

UNIVERSITY OF HOUSTON, Houston 77004; Elementary School Science (AAAS Science--A Process Approach); summer: two 3-week sessions, June 16 - July 4 and July 17 - August 1, 1969; academic year 1969-70: 30 meetings in each of two school districts; 90 elementary teachers from Clear Creek and Dickinson Independent School Districts. Teachers will study physical science subject matter and AAAS science materials in preparation for introducing these materials in their school curricula. Dr. Leo G. Mahoney, College of Education.

UNIVERSITY OF TEXAS AT AUSTIN, Austin 78712; Physical Science; summer: 8 weeks, June 3 - August 1, 1969; academic year 1969-70: 16 meetings; 20 teachers during the summer and 50 during the academic year from schools in central Texas. Participants will receive laboratory-oriented training in physics and chemistry especially planned for teachers having minimal preparation in the physical sciences. Dr. R. N. Little, Department of Physics.

UNIVERSITY OF TEXAS AT EL PASO, El Paso 79999; Economics; spring 1969: classroom visits by project staff and 10 meetings; summer: 8 weeks, June 9 - August 1, 1969; 25 teachers from El Paso and adjacent school districts. The economics content of the social studies materials used by the participants will be increased by special economics training and by integrating economics content into existing courses. Dr. Philip Duriez, Department of Economics.

WEST TEXAS STATE UNIVERSITY, Canyon 79015; Physical Science; summer: 6 weeks, June 2 - July 11, 1969; academic year 1969-70: 9 meetings; 30 junior high school teachers from Pampa, Dumas, Amarillo and Hereford school systems. The project will instruct teachers in the content of physical science textbooks recently approved by the Texas Education Agency. Dr. Claude E. Boatman, Department of Chemistry.

UTAH

BRIGHAM YOUNG UNIVERSITY, Provo 84601; Mathematics and Computer Science; summer: 8 weeks, June 16 - August 8, 1969; academic year 1969-70: 4 meetings; 30 high school teachers from Alpine, Granite, Jordan, Nebo, Ogden, Provo, Weber, and Salt Lake City school districts. The purpose of this program is to train 30 high school teachers of mathematics in the details of a new, integrated mathematics-computer course which they can then introduce into their respective schools. Dr. Floyd E. Haupt, Department of Mathematics.

UNIVERSITY OF UTAH, Salt Lake City 84112; Mathematics; summer: 6 weeks, June 9 - July 18, 1969; academic year 1969-70: 2 meetings; 80 elementary school teachers from the Granite School District. The project will help develop three teachers of mathematics in each of 50 elementary schools who will serve as resource people. Dr. D. K. Reed, Department of Mathematics.

UNIVERSITY OF UTAH, Salt Lake City 84112; Geography (High School Geography Project and Earth Science Curriculum Project materials); summer: 5 weeks, June 23 - July 26, 1969; academic year 1969-70: 6 meetings; 35 secondary school teachers from the Granite School District. An improvement in geography instruction in secondary schools will result from participant teachers working with student centered HSGP and ESCP materials specifically developed for geography instruction. Dr. Merrill K. Ridd, Department of Geography.

VIRGINIA

COLLEGE OF WILLIAM AND MARY, Williamsburg 23185; Mathematics; academic year 1969-70: 30 meetings; 25 teachers (elementary and junior high school) from the Williamsburg-James City County School System. Participants will receive training in the content and teaching of relevant portions of modern mathematics. Dr. S. Stuart Flanagan, School of Education.

WEST VIRGINIA

WEST LIBERTY STATE COLLEGE, West Liberty 26074; Earth Science (Earth Science Curriculum Project materials); summer: 5 weeks, June 16 - July 18, 1969; academic year 1969-70: 7 meetings; 30 junior high school teachers from schools of Hancock, Brooke, Ohio, Marshall, and Wetzel Counties. Teachers will receive training in the improved teaching of earth science using the Earth Science Curriculum Project materials. Dr. Clyde D. Campbell, Division of Science and Mathematics.

WEST VIRGINIA UNIVERSITY, Morgantown 26506; Mathematics; summer: 8 weeks, June 18 - August 12, 1969; academic year 1969-70: 8 meetings; 30 high school teachers from high schools in Monongalia, Marion, Preston, Taylor, and Randolph Counties. Teachers will receive eight weeks of work in pre-calculus mathematics including the preparation of 40 taped presentations for high school students. Professor J. C. Eaves, Department of Mathematics.

WISCONSIN

UNIVERSITY OF WISCONSIN, Madison 53706; Mathematics; summer: 8 weeks, June 23 - August 16, 1969, 25 elementary school teachers and principals from Madison public schools; academic year 1969-70: 36 weekly seminars, 9 additional meetings, for these participants and a group of additional teachers who were participants in 1968 program. The major objective of this project is to create a trained cadre of teachers to function as mathematics resource people in implementing the currently adopted Greater Cleveland Mathematics Program. Dr. R. C. Buck, Department of Mathematics.

UNIVERSITY OF WISCONSIN, Milwaukee 53201; Physical Science; summer: 8 weeks, June 16 - August 8, 1969, 30 secondary school teachers; academic year 1969-70: 5 meetings for summer participants and 30 meetings for 50 additional secondary school teachers from the Milwaukee Public School System. The school faculty, with the assistance of university professors, will use and evaluate a revised curriculum in physical science and conduct an in-service program during the academic year. Professor Robert A. Jaggard, Department of Physics.

UNIVERSITY OF WISCONSIN, Waukesha 53186; Elementary School Science (Elementary Science Study materials); summer: 6 weeks, June 23 - August 1, 1969; academic year 1969-70: 8 monthly meetings; 24 elementary school teachers, 8 principals, and 36 summer students (for demonstration classes) from the Hamilton School District. Teacher-participants will receive training in and modify, as needed, a new elementary science program, to be taught and evaluated by them in the following academic year. Professor Victor K. Wrigley, Department of Physics.

WYOMING

UNIVERSITY OF WYOMING, Laramie 82070; Chemistry and Physics; summer: 5 weeks, July 21 - August 22, 1969; academic year 1969-70: 60 meetings; 45 teachers from schools of 14 Wyoming communities and Fort Collins, Colorado. Special course in chemistry and physics will improve the backgrounds of selected teachers who will be assisted during the academic year through a telephone and remote blackboard communication system with the University. Dr. John E. Maurer, Department of Chemistry.

UNIVERSITY OF WYOMING, Laramie 82070; Physical Science; academic year 1969-70: weekly two-day visits by project staff to classes and schools of 76 physical science teachers in small high schools throughout Wyoming. A program specifically designed for the small, rural high school will be developed from a survey undertaken by university personnel of existing conditions in such schools and a one-week conference with teachers. Professor Derek Prowse, Department of Physics.

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